



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/522,315

09/22/2005

Zamir Tribelsky

P-7664-US

9214

49443 7590 12/18/2009
Pearl Cohen Zedek Latzer, LLP
1500 Broadway
12th Floor
New York, NY 10036

EXAMINER

YOO, REGINA M

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

12/18/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,315	Applicant(s) TRIBELSKY, ZAMIR	
	Examiner REGINA YOO	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on 11/29/2009 has been received and claims 1, 4 and 16-18 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/29/2009 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 1797

3. Claims 1, 4 and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Baca (20020079271).

As to Claim 1, Baca ('271) discloses a method for ultraviolet (UV) liquid disinfection (see entire document, particularly Abstract, Figures 2-3, p. 2 [0016]-[0018] and [0027], p. 3 [0030], and p. 4 [0037]-[0038]), comprising:

providing a stream of liquid (211, 305) to be disinfected by UV-radiation, where the liquid includes contaminants (see p.2-p.3 [0026]-[0027] and p. 4 [0038]; where contaminants being microorganisms); and

disinfecting the stream of liquid by directing, within said stream of liquid to be disinfected, said UV-radiation at an angular orientation that enables the liquid to be disinfected to intrinsically serve as a flowing liquid wave guide for the UV-radiation using total internal reflection (see entire document, particularly Figures 2-3, p. 2 [0027] and p. 4 [0040]-[0042], wherein as the stream of liquid is disinfected and the UV-radiation is directed into the stream at an angular orientation, the liquid is deemed to be enabled to serve as a flowing liquid wave guide for the UV-radiation using total internal reflection).

As to Claim 4, Baca ('271) discloses that said UV-radiation is generated by a laser source (see entire document, particularly Abstract, p.3 [0030] and p. 4 [0041]).

As to Claim 17, Baca ('271) discloses that the UV radiation is utilized is UVA-, UVB- or UVC-radiation (see entire document, particularly p. 2 [0027]).

As to Claim 18, Baca ('271) discloses that the liquid is water (see Abstract).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 4 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baca (20020079271) in view of Neuberger (5658148) or Schneider (3503804).

As to Claims 1 and 16, Baca ('271) discloses a method for ultraviolet (UV) liquid disinfection (see entire document, particularly Abstract, Figures 2-3, p. 2 [0016]-[0018] and [0027], p. 3 [0030], and p. 4 [0037]-[0038]), comprising:

providing a stream of liquid (211, 305) to be disinfected by UV-radiation, where the liquid includes contaminants (see p.2-p.3 [0026]-[0027] and p. 4 [0038]; where contaminants being microorganisms); and

disinfecting the stream of liquid by directing, within said stream of liquid to be disinfected, said UV-radiation at an angular orientation that enables the liquid to be disinfected to intrinsically serve as a flowing liquid wave guide for the UV-radiation using total internal reflection (see entire document, particularly Figures 2-3, p. 2 [0027] and p. 4 [0040]-[0042], wherein as the stream of liquid is disinfected and the UV-radiation is directed into the stream at an angular orientation, the liquid is deemed to be enabled to serve as a flowing liquid wave guide for the UV-radiation using total internal reflection).

Baca ('271) does not appear to specifically teach that the liquid stream has a refractive index greater than a refractive index of the surrounding of the stream of liquid.

As to the limitation that the liquid stream has a refractive index greater than a refractive index of the surrounding of the liquid stream so as to utilize the liquid as a flowing liquid wave guide for the radiation using total internal reflection, it was known in the art at the time of invention to provide a stream of liquid which has a surrounding with lower refractive index than the liquid stream that enables the liquid to serve as a flowing liquid wave guide for the radiation using total internal reflection.

Neuberger ('148) discloses a method of delivering a liquid jet along with laser radiation in a dental application to destroy oral bacteria viruses (see Figure 5, Col. 1 lines 32-44 and 61-63 and Col. 3 lines 37-44), the method comprising:

providing a stream of liquid (via 52 to 53) (see Figure 5) wherein the liquid has a refractive index is greater than a refractive index of the surrounding (see Col. 5 lines 21-24); and

directing, within said stream of liquid (12), said laser radiation that enables the liquid to serve as a flowing liquid wave guide for the radiation using total internal reflection (see Col. 3 lines 37-44, Col. 4 lines 1-25 and Col. 5 lines 19-25),

in order to contain the laser radiation within the fluid and utilize the fluid as a flowing liquid wave guide for the radiation.

Schneider ('804) also discloses a method for photochemical treatment, the method comprising:

providing a stream of liquid (2) (see entire document, particularly Figures 1-3 and 5) wherein said liquid has a refractive index greater than a refractive index of the surrounding (see entire document, particularly Col. 2, lines 61-67 and Col. 3, lines 19-23 wherein the occurrence of total internal reflection within the liquid of the radiation indicates that the liquid possesses a higher refractive index than the surrounding); and

directing UV-radiation (see Col. 2, lines 31-32) within said stream of liquid to disinfect the liquid such that the liquid serves as a flowing liquid wave guide using total internal reflection of the UV radiation (see entire document, particularly Col. 2, lines 22-28, 61-67 and Col. 3, lines 19-27),

in order to avoid hazards due to unintentional directing of the laser ray onto living organisms or "overshooting" (see Col. 3 lines 19-24).

It would have been obvious to one of ordinary skill in this art at the time of invention to provide such a configuration wherein the liquid stream has a refractive index greater than a refractive index of the surrounding of the stream of liquid in the method of Baca in order to contain the radiation within the fluid stream so as to avoid dangers of the radiation being applied to unintended object or material when the radiation is emitted beyond the location where the radiation is first introduced into the water as shown by Neuberger or Schneider.

As to Claim 4, Baca ('271) discloses that said UV-radiation is generated by a laser source (see entire document, particularly Abstract, p.3 [0030] and p. 4 [0041]).

Schneider ('804) also discloses that said UV-radiation is generated by a laser source (see entire document, particularly Col. 2, lines 59-60 and Col. 3, lines 69-71).

As to Claim 17, Baca ('271) discloses that the UV radiation is utilized is UVA-, UVB- or UVC-radiation (see entire document, particularly p. 2 [0027]).

As to Claim 18, Baca ('271) discloses that the liquid is water (see Abstract).

Neuberger ('148) also discloses that the liquid is water (see Col. 4 lines 7-9).

Schneider ('804) also discloses that the liquid is water (see entire document, particularly Col. 3, line 24 and Col. 4, line 26).

Thus, Claims 1, 4 and 16-18 would have been obvious within the meaning of 35 U.S.C. 103(a) over the combined teachings of Baca ('271) and Neuberger ('148) or Schneider ('804).

Response to Arguments

7. Applicant's arguments filed 11/29/2009 have been fully considered but they are not persuasive.

Specifically, in response to Applicant's argument regarding the reference of Baca in the last 6 lines of page 4 to first eight lines of page 5 in Remarks, Examiner would point to Baca's disclosure in paragraph [0043] in pages 4-5 that the configuration disclosed by Baca enables the liquid to serve as a flowing liquid wave guide for the UV-radiation.

As to Applicant's arguments in regards to the rejection made in view of Baca and in view of the combined teaching of Baca and Neuberger or Schneider in page 5 of Remarks, Examiner would first point out that the argument - "disinfecting a stream of liquid using total internal reflection" - is misdirected as the claim merely requires that the disinfection occurs by UV radiation being directed at an angular orientation into the liquid and only that with such directing of radiation, the liquid be able to serve (i.e. "enabled") as a flowing liquid wave guide for the UV-radiation using total internal reflection. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

Art Unit: 1797

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, it is deemed that the combined teaching of Baca and Neuberger or Schneider discloses all of the claimed limitations.

Moreover, Examiner would disagree with Applicant's argument that "it would not be obvious to modify the teaching of the Baca reference, which does not teach or suggest any use of total internal reflection with either the teaching of Neuberger or Schneider" in page 5 of Remarks, for the reasons as discussed in above paragraphs. In addition, in view of Baca's disclosure as discussed above where Baca teaches that the method further comprises directing the radiation from a water treatment area within a handpiece to a location outside to a treatment area such as in a patient's mouth, Examiner would point out that the teaching of Neuberger and/or Schneider is particularly relevant. Finally, Examiner would also indicate that Applicant is attempting to argue against the references individually, where one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REGINA YOO whose telephone number is (571)272-6690. The examiner can normally be reached on Monday-Friday, 10:00 am - 7:00 pm.

Art Unit: 1797

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth L McKane/
Primary Examiner, Art Unit 1797

RY